

# Mineral Industry Surveys

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## ZINC IN MARCH 2006

Domestic mine production (recoverable) of zinc in the first quarter of 2006 of 171,000 metric tons (t) was essentially unchanged from that of the first quarter in 2005 and decreased by 3% from that of the fourth quarter of 2005, according to the U.S. Geological Survey. Estimated smelter production of 62,400 t of refined zinc was about 15% lower than in the first quarter of 2005 and about 15% more than that in the fourth quarter of 2005. Apparent consumption of 253,000 t of zinc was essentially unchanged from that in the first quarter of 2005.

The Platts Metals Week average composite price for North American Special High Grade for the first quarter of 2006 increased to 108.20 cents per pound. The price was about 69% (44.03 cents per pound) higher than in the first quarter of 2005. The average London Metal Exchange Ltd. (LME) cash price increased to \$2,241.75 per metric ton of zinc, a 70% increase compared with the price in the first quarter of 2005. During March, global LME zinc stocks dropped by 46,625 t to 280,600 t and were down by 112,950 t from yearend 2005 stocks.

According to China's National Bureau of Statistics, refined zinc production was of 684,126 t in the first quarter of 2006, a 15% increase compared with that in the first quarter of 2005. The large increase is partially due to the low level of production in 2005 and production from new mining and smelting facilities. Chinese imports of zinc concentrate were expected to remain at the same level as in 2005, and the national production of refined zinc was expected to increase by 200,000 t. The recently commissioned 100,000-metric-ton-per-year (t/yr) Yuguang Gold-Lead Group Co., Ltd. plant produced about 24,100 t of refined zinc in the first quarter of 2006, and the Gansu Chengzhou Mining Group Co. increase its output of refined zinc by 106% to 9,886 t in the first quarter of 2006 from 4,811 t in the first quarter of 2005 (Antaika, 2006; CRU International Ltd., 2006).

In March, Mitsui Mining and Smelting Co. Ltd. (Tokyo, Japan) started full operation of its Palka zinc mine in Peru. The mine is expected to produce 16,000 t/yr of recoverable zinc in concentrate. All Palka concentrate is slated to be treated and refined at Mitsui's three plants in Japan. Mitsui operates the 72,000-t/yr Kamioka Mining and Smelting Co. Ltd. zinc

smelter, the 117,600-t/yr Hikoshima Smelting Co. Ltd. smelter, and the 53,000-t/yr Hachinohe Smelting Co. Ltd. smelter. Mitsui also owns the 57,000-t/yr Huanzala Mine in Peru through its subsidiary, Compañia Minera Santa Luisa S.A. Huanzala concentrate is also treated at Mitsui smelters. Palka's mine life is expected to be more than 10 years (Platts Metals Week, 2006).

Falconbridge Ltd. (Toronto, Ontario, Canada) produced 64,800 t of mine zinc in the first quarter of 2006, down 3% from the 67,100 t production in the same period in 2005, largely as a result of lower mill-head grades and the residual effects of a rock burst which occurred at the Brunswick Mine in November 2005. Falconbridge's share of refined zinc production at the Noranda Income Fund CEZ Refinery totaled 15,400 t versus 16,700 t during the first quarter of 2005. In the first quarter of 2006, sales volumes of zinc in concentrate decreased 28% to 68,400 t from 94,800 t in the first quarter of 2005, owing to the buildup of inventory to be shipped to the Noranda Income Fund during the second quarter of 2006 and to the timing of vessel shipments and arrivals (Falconbridge Ltd., 2006).

Falconbridge's and Teck Cominco Ltd.'s 50-50 joint venture partnership, the Lennard Shelf zinc operations in Australia, was expected to restart in early 2007. The operations are presently under care and maintenance. The annual production rate is estimated to be 70,000 to 80,000 t/yr of zinc in concentrate during a mine life of 4 to 5 years (Falconbridge Ltd., 2006; Teck Cominco Ltd., 2006).

The Defense National Stockpile Center aggregated cash disposal (sale) of zinc in March, under the monthly Basic Ordering Agreement DLA-Zinc-004, was 1,724 t (approximately 1,900 short tons), with an approximate value of \$4.4 million (Defense National Stockpile Center, 2006).

## References Cited

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TABLE 1  
SALIENT ZINC STATISTICS<sup>1</sup>

(Metric tons, unless otherwise specified)

	2005	2006			
	January- December	January	February	March	January- March
<b>Production:</b>					
Mine, zinc content of concentrate	747,000	60,400	53,400	63,900	178,000
Mine, recoverable zinc	719,000	58,100	51,400	61,500	171,000
Smelter, refined zinc <sup>2</sup>	259,000	21,200	19,000 <sup>e</sup>	22,100 <sup>e</sup>	62,400 <sup>e</sup>
<b>Consumption:</b>					
Refined zinc, reported	405,000	34,800	34,500	33,500	103,000
Ores <sup>e</sup> (zinc content)	727	61	61	61	182
Zinc-base scrap <sup>e</sup> (zinc content)	191,000	15,900	15,900	15,900	47,600
Copper-base scrap <sup>e</sup> (zinc content)	176,000	14,700	14,700	14,700	44,000
Aluminum-and magnesium-base scrap <sup>e</sup> (zinc content)	1,430	120	120	120	359
Total <sup>e</sup>	774,000	65,500	65,200	64,300	195,000
Apparent consumption, metal <sup>3</sup>	939,000	92,700 <sup>r</sup>	74,700 <sup>r</sup>	85,900 <sup>4</sup>	253,000 <sup>4</sup>
Stocks of refined (slab) zinc, end of period:					
Producer <sup>5</sup>	XX	6,750	5,530 <sup>e</sup>	6,580 <sup>e</sup>	XX
Consumer <sup>6</sup>	XX	54,800	56,900	49,800	XX
Merchant	XX	10,200	10,200	10,200	XX
Total	XX	71,800	72,600	66,600	XX
Shipments of zinc metal from Government stockpile	20,400	1,890	526	1,720	2,250
<b>Imports for consumption:</b>					
Refined (slab) zinc	603,000	72,700	56,000	NA	129,000 <sup>7</sup>
Oxide (gross weight)	103,000	7,540	6,910	NA	14,400 <sup>7</sup>
Ore and concentrate (zinc content)	153,000	3,410	10,300	NA	13,700 <sup>7</sup>
<b>Exports:</b>					
Refined (slab) zinc	782	6	35	NA	41 <sup>7</sup>
Oxide (gross weight)	13,700	1,630	2,040	NA	3,670 <sup>7</sup>
Ore and concentrate (zinc content)	776,000	18,100	3,680	NA	21,800 <sup>7</sup>
Waste and scrap (gross weight)	50,500	4,230	4,060	NA	8,290 <sup>7</sup>
<b>Price:</b>					
London Metal Exchange, average, dollars per metric ton	\$1,381.37	\$2,089.92	\$2,218.90	\$2,416.44	\$2,241.75
Platts Metals Week North American Special High Grade, average, cents per pound	67.14	100.96	106.84	116.80	108.20

<sup>e</sup>Estimated. <sup>r</sup>Revised. NA Not available. XX Not applicable.

<sup>1</sup>Data are rounded to no more than three significant digits; except prices; may not add to totals shown.

<sup>2</sup>Includes zinc metal used to manufacture zinc oxide.

<sup>3</sup>Smelter production plus imports minus exports plus shipments from Government stockpile plus stock change.

<sup>4</sup>Data based on reported consumption, change in stocks, and estimated trade data.

<sup>5</sup>Data from U.S. Geological Survey and American Bureau of Metal Statistics.

<sup>6</sup>Includes an estimate for companies that report annually.

<sup>7</sup>Includes data through February only.

TABLE 2  
REFINED ZINC PRODUCED IN THE UNITED STATES<sup>1,2</sup>

(Metric tons)

Month	Beginning stocks <sup>3</sup>	Production	Shipments	Ending stocks <sup>3</sup>
2005:				
February	4,290	21,200	20,700	4,820
March	4,820	24,100	23,100	5,790
April	5,790	22,000	20,900	6,810
May	6,810	21,500	22,000	6,360
June	6,360	18,100	16,400	8,070
July	8,070	20,200	20,900	7,400
August	7,400	20,500	21,000	6,960
September	6,960	19,900	22,500	4,390
October	4,390	22,600	23,000	4,010
November	4,010	24,600	24,500	4,040
December	4,040	23,700	22,200	5,590
January-December	XX	259,000	258,000	XX
2006:				
January	5,590	21,200 <sup>e</sup>	20,100 <sup>e</sup>	6,750
February	6,750	19,000 <sup>e</sup>	20,200 <sup>e</sup>	5,530
March	5,530	22,100 <sup>e</sup>	21,100 <sup>e</sup>	6,580
January-March	XX	62,400 <sup>e</sup>	61,300 <sup>e</sup>	XX

<sup>e</sup>Estimated. XX Not applicable.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Includes zinc metal used to manufacture zinc oxide.

<sup>3</sup>Includes stocks held at locations other than smelters.

Sources: U.S. Geological Survey and American Bureau of Metal Statistics.

TABLE 3  
APPARENT CONSUMPTION OF REFINED ZINC ACCORDING TO INDUSTRY USE  
AND PRODUCT<sup>1</sup>

(Metric tons)

Industry and product	2005	2006			January- March
	January- December <sup>2</sup>	January <sup>r</sup>	February <sup>r</sup>	March <sup>2</sup>	
Galvanizing:					
Sheet and strip	392,000	38,500	31,700	35,500	106,000
Other	121,000	12,900	9,200	11,700	33,800
Total	513,000	51,400	40,900	47,200	140,000
Brass and bronze	147,000	14,600	11,500	13,400	39,400
Zinc-base alloy	203,000	19,600	16,100	18,600	54,400
Other uses <sup>3</sup>	76,900	7,100	6,200	6,700	19,900
Grand total	939,000	92,700	74,700	85,900	253,000

<sup>r</sup>Revised.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Data based on reported consumption, stocks, and estimated trade data.

<sup>3</sup>Includes zinc used in making zinc dust, desilvering lead, powder, alloys, anodes, chemicals, castings, light metal alloys, rolled zinc, and miscellaneous uses not elsewhere specified.

TABLE 4  
AVERAGE ZINC PRICES<sup>1</sup>

Period	North American	LME <sup>2</sup> cash	
	¢/lb.	¢/lb.	\$/t
2005:			
March	66.49	62.47	1,377.33
April	63.03	58.96	1,299.81
May	60.46	56.39	1,243.23
June	61.73	57.85	1,275.33
July	57.96	54.16	1,194.08
August	62.94	58.88	1,298.05
September	67.89	63.37	1,397.08
October	72.66	67.49	1,487.91
November	78.47	73.06	1,610.61
December	88.01	82.62	1,821.44
January-December	67.14	62.66	1,381.37
2006:			
January	100.96	94.80	2,089.92
February	106.84	100.65	2,218.90
March	116.80	109.61	2,416.44
January-March	108.20	101.68	2,241.75

<sup>1</sup>Special High Grade.

<sup>2</sup>London Metal Exchange.

Source: Platts Metals Week.

TABLE 5  
U.S. EXPORTS OF ZINC<sup>1</sup>

Material	2005		2006 <sup>2</sup>			
	Quantity (metric tons)	Value (thousands)	February		Year to date	
			Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Refined (slab) zinc	784	\$1,500	35	\$67	41	\$75
Ore and concentrate (zinc content)	786,000	477,000	3,680	3,930	21,800	11,000
Waste and scrap (gross weight)	56,000	62,000	4,060	5,780	8,290	10,900
Powders, flakes, dust (zinc content)	9,310	18,500	762	1,580	1,680	3,120
Oxide (gross weight)	14,600	23,600	2,040	3,180	3,670	5,290
Chloride (gross weight)	1,860	2,310	104	139	184	219
Sulfate (gross weight)	2,820	1,870	549	353	703	448
Compounds, other (gross weight)	1,130	887	26	34	50	89

<sup>1</sup>Data are rounded to no more than three significant digits.

<sup>2</sup>Data for March 2006 were not available at time of publication.

Source: U.S. Census Bureau.

TABLE 6  
U.S. IMPORTS FOR CONSUMPTION OF ZINC<sup>1</sup>

Material	2005		2006 <sup>2</sup>			
			February		Year to date	
	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Refined (slab) zinc	668,000	\$875,000	56,000	\$94,400	129,000	\$205,000
Ore and concentrate (zinc content)	156,000	117,000	10,300	11,900	13,700	15,500
Waste and scrap (gross weight)	9,580	8,820	1,060	1,300	2,230	2,520
Powders, flakes, dust (zinc content)	23,400	46,000	2,030	5,350	3,690	9,070
Oxide (gross weight)	109,000	127,000	6,910	11,700	14,400	23,300
Chloride (gross weight)	723	1,250	23	17	78	68
Sulfate (gross weight)	31,100	16,600	4,360	2,530	7,490	4,380
Compounds, other (gross weight)	7,010	6,370	623	510	1,990	1,330

<sup>1</sup>Data are rounded to no more than three significant digits.

<sup>2</sup>Data for March 2006 were not available at time of publication.

Source: U.S. Census Bureau.

TABLE 7  
SHIPMENTS OF ZINC METAL FROM THE NATIONAL  
DEFENSE STOCKPILE<sup>1</sup>

(Metric tons)

Period	Beginning inventory	Shipments	Ending inventory
2005:			
March	65,600	--	65,600
April	65,600	220	65,400
May	65,400	301	65,100
June	65,100	2,960	62,100
July	62,100	2,600	59,500
August	59,500	3,680	55,800
September	55,800	3,710	52,100
October	52,100	3,010	49,100
November	49,100	2,830	46,300
December	46,300	299	46,000
January-December	XX	20,400	XX
2006:			
January	46,000	1,890	44,100
February	44,100	526	43,600
March	43,600	1,720	41,900
January-March	XX	4,140	XX

XX Not applicable. -- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

Source: Defense Logistics Agency.

TABLE 8  
U.S. IMPORTS OF ZINC, BY TYPE OF MATERIAL AND COUNTRY<sup>1,2</sup>

(Metric tons)

Material and country	General imports			Imports for consumption		
	2006			2006		
	2005	February	Year to date	2005	February	Year to date
Ore and concentrate (zinc content):						
Australia	8,590	--	--	8,590	--	--
Ireland	13,000	4,260	4,260	13,000	4,260	4,260
Mexico	27,300	--	2,850	27,300	--	2,850
Peru	104,000	6,040	6,040	104,000	6,040	6,040
Other	2,900	--	565	2,900	--	565
Total	156,000	10,300	13,700	156,000	10,300	13,700
Blocks, pigs, or slab:						
Australia	1	--	--	24,600	3,660	10,100
Brazil	43,700	2,880	3,790	43,800	2,880	3,790
Canada	439,000	39,100	87,500	439,000	39,100	87,500
China	15	--	--	2,140	645	2,440
Japan	--	--	--	1,210	49	347
Kazakhstan	--	--	--	--	--	--
Korea, Republic of	5,030	--	--	8,710	3,800	9,460
Mexico	147,000	5,860	14,800	147,000	5,860	14,800
Norway	--	--	--	--	25	25
Peru	235	--	--	834	--	201
Other	1,320	--	--	1,770	--	--
Total	636,000	47,800	106,000	668,000	56,000	129,000
Dross, ashes, fume (zinc content)	15,800	1,830	3,910	15,800	1,830	3,910
Grand total	807,000	60,000	124,000	840,000	68,200	146,000
Oxide (gross weight):						
Canada	62,000	4,260	8,850	62,000	4,260	8,850
China	173	--	--	173	--	--
Italy	15,400	--	--	15,400	--	--
Japan	1,080	53	114	1,080	53	114
Mexico	24,100	2,430	4,900	24,100	2,430	4,900
Netherlands	4,450	127	308	4,450	127	308
Other	2,040	37	273	2,040	37	273
Total	109,000	6,910	14,400	109,000	6,910	14,400
Other (gross weight):						
Waste and scrap	9,580	1,060	2,230	9,580	1,060	2,230
Sheets	3,630	250	479	3,630	250	479
Powders, flakes, dust (zinc content)	23,400	2,030	3,690	23,400	2,030	3,690

-- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Data for March 2006 were not available at time of publication.

Source: U.S. Census Bureau.